

JAMES R. DELINE, is Vice President of DBD Systems, Inc. He was formerly Vice President of Research and Development with MRI Systems Corporation where he helped plan and implement the enhancement of the Remote File Management Systems (RFMS) into a commercially viable data base management system, System 2000. Mr. DeLine was founder and Executive Vice President of Information Research International, Inc. (IRI), a software development firm which later merged with MRI.

BERNARD K. PLAGMAN, a Vice President of DBD Systems, Inc., is a specialist in information systems planning and data base management. He is an internationally recognized expert in the data base field, having served as the National Chairman of ACM's Special Interest Group on Management of Data (SIGMOD). As a Senior Management Systems Consultant at the Stanford Research Institute, Mr. Plagman performed consulting services for senior management of major corporations in the areas of long-range planning, data base management and on-line systems development.

RONALD W. HENRY has served as a consultant and instructor for The Institute for Advanced Technology over the past five years. He has supervised and developed data base and information management systems, and researched improved instructional techniques for data management, MIS, standards for data processing, and operations research. As a Senior Systems Specialist with the Data Services Division of Control Data Corporation, he was responsible for the development of Management Information Systems.

TUITION

Tuition, including course materials and luncheons, is \$395 for the first participant and \$370 for all additional persons from the same organization attending the same presentation. Effective January 1, 1976, the cost of tuition for this seminar will be \$485 for the first participant. If a check is received in advance of the opening date of the seminar, a \$25 discount will be allowed for other participants from the same organization attending the same presentation. Check should be made payable to The Institute for Science and Public Affairs.

Classes begin at 9:00 a.m. and end at 5:00 p.m.

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November 10-12, 1975

Key Bridge Marriott

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Washington, D.C. 20007

Room Reservations: 703/524-6400

December 8-10, 1975

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Room Reservations: 212/247-7000

January 28-30, 1976

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ISP

INSTITUTE FOR SCIENCE AND PUBLIC AFFAIRS

ADMINISTRATION and CONTROL of the DATA BASE

CODE C 2045

FOUR 3-DAY SEMINARS

November 10-12, 1975, Washington, D.C.

December 8-10, 1975, New York, New York

January 28-30, 1976, San Francisco, California

February 25-27, 1976, Washington, D.C.

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THE INSTITUTE FOR
ADVANCED TECHNOLOGY

THE COURSE: The development of a data base oriented environment utilizing Data Base Management software, has led to basic change in the data processing organization of many firms. A widely recognized and most significant step in this direction involves the creation of a *Data Administration function* — with general responsibility for development and control of the data base.

This course provides an in-depth discussion of the specific responsibilities and essential functions of the Data Administrator. The particular emphasis is given to the environment in which the DA is most effective and to the various responsibilities and authority which are required for effective communication and

A further major objective of this course is to provide attendees with useful tools and related information to enable them to function effectively as Data Administrators. In this regard, recommended procedures for the data collection, analysis, and usage of data are presented, and the content and form of data base documentation are provided for complete discussion. In addition, this course specifically addresses standards and procedures which are vital to a Transaction Oriented, Data Base supported operation; Security-Integrity-Recovery-Control — all intended to enable organizations to move forward in a planned, carefully controlled manner.

WHO SHOULD ATTEND: This course is for Data Processing Management, Data Administrators, Data Base Designers, and Systems Analysts — those individuals most concerned with the effective use of data in their organizations.

COURSE OUTLINE

- I. INTRODUCTION TO DATA ADMINISTRATION
 - A. Discussion of the Present Environment
 1. Current Organization Structure
 2. Existing Staff/Line Functions
 3. Present System Development Life Cycle
 - B. Relationships between Management—Users—Systems—Programming—Operations
- II. POTENTIAL ROLE OF DATA ADMINISTRATION
 - A. Why the Data Administration is Needed
 1. Objectives/Concerns of Users—Systems—Analysts—Programmers
 2. Objectives of the Organization
 - B. General Responsibilities of the Data Administrator

III. FUNCTIONS AND DATA ADMINISTRATION

- A. Data Collection
- B. Definition of Data Base
- C. Data Access
- D. Standards/Procedures for the Data Base
- E. Security and Integrity of the Data Base
- F. Recovery Procedures for the Data Base
- G. Data Base Documentation
- H. Monitoring and Control of the Data Base

IV. DATA COLLECTION AND ANALYSIS TOOLS

- A. Procedures and Methodology of Data Collection
- B. The Transaction Matrix
- C. Data Item/File Matrix—Where Data Is Used
- D. Data Item/User Matrix—How Data Is Used
- E. Decisions Based Upon Information Collected

V. DEFINITION OF CONTENTS AND STRUCTURE OF THE DATA BASE

- A. Definition and Assignment of Data Item Names
- B. Naming—Descriptive Conventions
- C. Criteria for Establishing Data Base Contents
- D. Physical vs. Logical Data Structures
- E. Blocking Strategies
- F. DDL—Data Definition
- G. Use of the Access Requirements Matrix

VI. DATA ACCESS CONTROL

- A. Response Requirements
- B. Multi-Access Control
- C. Linkage vs. Indexing
- D. Trade-Off Analysis
- E. Data Usage Statistics

VII. STANDARD PRACTICES FOR DATA BASE USAGE

- A. The Data Manipulation Language (DML)
 1. Use of Verbs by Programmers
 2. Reserved Functions (for the Data Administrator)
- B. Inquiry Constraints and Control
- C. Functional Access Control and Security
- D. Operating Functions
 1. Recovery
 2. Data Base Accounting
 3. Reorganization/Restructuring

VIII. SECURITY AND INTEGRITY OF THE DATA BASE

- A. Protection Against Destruction or Unauthorized Access
- B. Use of Passwords and Privacy Locks
- C. Levels of Security—Files, Blocks, Records, Data Items
- D. Deletion/Reorganization Control
- E. Functional Control
- F. Deadly Embrace Conditions

IX. RECOVERY PROCEDURES FOR THE DATA BASE

- A. Journalizing/Backup Requirements
- B. Audit Trail Analysis and Control
- C. Recovery Under Various Conditions
 1. Catastrophic Failure
 2. Intermediate Failure
 3. Structural Recovery
 4. Valid/Incorrect Updates

X. DATA BASE DOCUMENTATION

- A. The System Design Documentation Package
 1. Essential Components
 2. Communication of Requirements and Decision Rules
- B. Data Base Oriented Requirements
 1. What Information is Needed for Effective Operation
 2. Documentation Maintenance
- C. Glossary of Terms
 1. Identification and Handling of Synonyms
 2. Redundant Data Items
 3. Where Used Cross Reference
- D. Data Item Description
 1. How to Fully Refine a Data Item
 2. Generation Procedures
- E. Data Record Description (Data Aggregates)
 1. Definition of Contents
 2. Usage by Application/Users
- F. Data Dictionary—Directory Systems (UCC TEN—The Data Catalog—LMS—DD/DS—LEXICON—ET AL)

XI. ORGANIZATIONAL IMPLICATIONS OF DATA ADMINISTRATION

- A. Planning for the Data Administrator
 1. Job Profile—Characteristics
 2. Staff Size—Selection
- B. Lines of Authority/Reporting
 1. Staff vs. Line Responsibility
 2. Information Flow
- C. Interaction with Management—Users—Systems Analysis—Programming—Operations
 1. Information/Documentation Paths
- D. Distributed Data Administration Functions
 1. In Multi-Divisional Organizations
 2. Horizontal vs. Vertical Distribution (Where do the Functions Belong?)
- E. Chargeback Procedures and Considerations

XII. SUMMARY DISCUSSION

The right to cancel the seminar or to amend the syllabus is reserved.

THE INSTRUCTIONAL STAFF

(Each presentation will be conducted by one of the following seminar leaders.)

HAROLD UHRBACH, an internationally recognized lecturer and consultant, is President of DBD Systems, Inc. He is a former Director of Professional Services for Auerbach Associates, Inc., where he directed and participated in the evaluation and selection of hardware/GDBMS software, the design and implementation of data base oriented systems, and the design of transaction oriented information systems. Mr. Uhrbach was previously associated with General Electric, Control Data Corporation and The Bendix Corporation.